

HARSHIT DUBEY

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WORK EXPERIENCE

Technical Content Writer | Internship

Jun 2026 - Present

takeuforward

Remote

- Developed and optimized 200+ DSA and problem-solving articles, integrating concepts of **data structures**, **algorithms** to improve student understanding.
- Collaborated with 5+ mentors and developers to review technical accuracy, enhance content quality, and align resources with learner needs.
- Structured coding explanations, editorials, and documentation for 200+ problems, making complex DSA concepts easier for students to follow.
- Improved SEO strategy by optimizing titles, keywords, and metadata, helping multiple technical articles rank among top Google search results.
- Enhanced the overall learning experience by delivering clear, engaging, and high-quality technical content for beginner and intermediate learners.

Technologies / Skills Used : Algorithm, Dsa

Problem Setter | Internship

May 2026 - Jun 2026

AskSenior

Remote

- Designed and authored ICPC-style algorithmic problems covering advanced topics such as Graph Theory, Dynamic Programming, Greedy Algorithms, Trees, Number Theory, and Data Structures.
- Developed complete problem statements, constraints, sample cases, hidden test cases, and editorial solutions to ensure contest-level quality and clarity.
- Created optimized reference solutions in C++ with rigorous complexity analysis and edge-case handling.
- Validated problem correctness through extensive stress testing, brute-force verification, and custom test generation techniques.
- Balanced problem difficulty across multiple rating ranges by analyzing solution approaches, implementation complexity, and expected contestant performance.
- Collaborated with fellow problem setters and reviewers to refine statements, eliminate ambiguities, and maintain competitive programming standards.
- Evaluated submissions, identified corner cases, and improved test coverage to prevent unintended solutions and ensure fair assessment.

Technologies / Skills Used : Dsa, Algorithm

PROJECTS

Text to Learn Course Generator | GitHub Live Demo

May 2026 - Jun 2026

- Built a full-stack AI course generator that converts user prompts into structured courses, modules, and lessons using Gemini/GPT APIs, focusing on **databases**, **networking**, and **compilers**.
- Created a modular lesson renderer supporting 6+ content types, including headings, MCQs, code blocks, videos, Hinglish explanations, and PDFs.
- Designed scalable REST APIs with Node.js, Express, MongoDB, and Mongoose to manage 3-level Course > Module > Lesson data relationships.
- Integrated Auth0 authentication with protected backend routes, enabling secure user access and personalized course generation workflows.
- Implemented AI JSON parsing and validation for dynamic lesson blocks, improving content consistency across generated modules and lessons.
- Deployed 2 production services on Render, including the frontend and backend API, enabling cloud-hosted access and stable communication.

Technologies / Tools Used : React, Node.js, Express, MongoDB, MongooseAuth0, Gemini/GPT APIs, networking, database

Rubik's Cube Solver using Korf's IDA* Algorithm | GitHub Live Demo Research Paper

Jun 2026 - Jun 2026

- Built a virtual 3x3 Rubik's Cube solver in C++ using BFS, DFS, IDDFS, and Korf's IDA* for efficient scrambled-state search.
- Implemented three cube state representations, including a compact bitboard model storing cube states using six 64-bit integers.
- Designed custom hash functions and overloaded operators to optimize cube state lookup using C++ STL containers like unordered_map.
- Improved state exploration speed by nearly 10x through optimized hashing, compact memory storage, and efficient comparison logic.
- Solved cubes scrambled up to 8 moves in under 3 seconds and up to 13 moves in under 10 seconds using Korf's IDA* algorithm.

Technologies / Tools Used : Vite, TypeScript, Three.js, cubejs, Kociemba-style solving, Lucide Icons, Custom CSS, Render Static Site

SKILLS

Databases :	MySQL, PostgreSQL, SQLite, MongoDB, Firebase, Supabase
Frameworks & Libraries :	React, Next.js, NestJS, Tailwind CSS, Node.js
Programming Languages :	C++, C, SQL, JavaScript, C#, Java, TypeScript
Soft Skills :	Leadership, Communication, Collaboration, Time Management, Problem Solving, Critical Thinking
Tools & Platforms :	Git, GitHub, Linux/Unix Shell, GDB, VS Code, Docker, Linux

ACHIEVEMENTS & CODING PROFILES

- Codeforces:** Specialist, Max Rating **1443** | Solved **400+ problems** | [Profile](#)
- CodeChef:** **4 Star**, Max Rating **1813** | [Profile](#)
- AlgoZenith:** | [Profile](#)
- LeetCode:** Rating **1600+** | Ranked in the **top 25%** of coders | [Profile](#)
- Ranked **Top 6% globally** in **Meta Hacker Cup 2024 Round 2** with Global Rank **3179**; achieved Global Rank **3875** in Round 1.
- Secured Global Rank **1521** among **30,000+ participants** in a Codeforces Div. 2 Contest.

EDUCATION

Year	Degree	Institute
Aug 2024 - Jul 2028	Bachelor of Technology in Computer Science and Engineering	Indian Institute of Information Technology Vadodara

POSITIONS OF RESPONSIBILITY

Joint Secretary

2025 – Present

Enigma – The Mathematics Club

IIIT Vadodara

- Orchestrated the flagship event Equinox** during Cerebro (Technical Fest), managing logistics for **150+** participants.
- Spearheaded an orientation workshop** on Mathematical Modeling for **200+** freshmen, driving a **20% increase** in club registrations.